

We claim:

1. A system for performing chest compressions on a patient, said system comprising:

a belt drive platform comprising:

5 a housing;

a drive spool operably attached to the housing; and

a means for rotating the drive spool, said means for rotating disposed within the housing and operably attached to the drive spool;

10 a compression belt cartridge comprising:

a belt suitable for compressing the chest of the patient; and

a spline attached to the belt;

wherein the spline is removably attachable to the drive
15 spool;

wherein rotation of the drive spool tightens the belt to compress the chest.

2. The system of claim 1 further comprising a slot disposed in the drive spool, said slot having a particular shape, wherein
20 the spline has a particular shape conforming to the shape of the slot and wherein the spline fits into the slot.

3. The system of claim 2 further comprising a means for identifying whether the spline is inserted into the slot, said means for identifying operably connected to the slot.

4. The system of claim 1 further comprising a guide plate operably attached to the housing and to the drive spool, said guide plate having a slot disposed within the guide plate, said slot sized and dimensioned to permit passage of a portion of the
5 spline into the drive spool slot.

5. The system of claim 2 further comprising a guide plate operably attached to the housing and to the drive spool, said guide plate having a slot disposed within the guide plate, said slot sized and dimensioned to permit passage of a portion of the
10 spline into the drive spool slot.

6. The system of claim 5 wherein the drive spool is rotatable by the user and wherein spline may be inserted into the drive spool slot when the guide plate slot and the drive spool slot are aligned.

15 7. The system of claim 5 wherein the guide plate is rotatable by the user and wherein the spline may be inserted into the drive spool slot when the guide plate slot and the drive spool slot are aligned.

8. The system of claim 2 further comprising:

20 a guide plate operably attached to the housing, wherein the guide plate is disposed in relation to the drive spool such that the spline may not be inserted into and removed from the drive spool slot unless the guide plate is moved;

25 a means for providing a biasing force to the guide plate such that the guide plate is biased to be disposed in relation to the drive spool to prevent the spline from being inserted into and removed from the drive spool slot;

wherein a user may manually move the guide plate sufficiently to insert the spline into and remove the spline from the slot.

9. The system of claim 1 further comprising labels disposed on
5 the housing indicating how to attach the spline to the drive spool.

10. The system of claim 2 further comprising labels disposed on the housing indicating how to attach the spline to the drive spool.

10 11. The system of claim 4 further comprising labels disposed on the housing indicating how to attach the spline to the drive spool.

12. The system of claim 5 further comprising labels disposed on the housing indicating how to attach the spline to the drive
15 spool.

13. The system of claim 8 further comprising labels disposed on the housing indicating how to attach the spline to the drive spool.

14. The system of claim 1 wherein the belt cartridge further
20 comprises a cover plate operably attached to the belt, and wherein the cover plate is operably attached to the belt drive platform.

15. A system for performing chest compressions on a patient, said system comprising:

25 a housing;

a drive spool operably attached to the housing;

a means for rotating the drive spool, said means for rotating disposed within the housing and operably attached to the drive spool;

5 a belt cartridge removably attached to the housing, said belt cartridge comprising:

a belt suitable for compressing the chest of the patient, said belt operably attached to the drive spool;

10 a cover plate operably attached to the belt and removably attached to the housing;

wherein rotating the drive spool tightens the belt to compress the chest.

16. The system of claim 15 wherein the belt cartridge further comprises a spline operably attached to the belt and removably attached to the drive spool.

17. The system of claim 16 wherein the cover plate and the housing are sized and dimensioned such that the cover plate attaches to the housing in only one orientation.

18. The system of claim 15 further comprising a hook attached to the cover plate and a corresponding aperture disposed within the housing, wherein the hook fits within the aperture when the cover plate is attached to the housing.

19. The system of claim 15 further comprising a snap latch attached to the cover plate and a corresponding pair of detents attached to the housing, wherein the snap latch fits between the corresponding pair of detents when the cover plate is attached to the housing.

20. The system of claim 15 further comprising labels attached to the cover plate indicating how to attach the cover plate to the housing.

21. A system for performing chest compressions on a patient,
5 said system comprising:

a belt drive platform, said belt drive platform having a channel beam, an aperture and a pair of detents;

a drive spool operably attached to the belt drive platform, said drive spool having a particular shape;

10 a means for rotating the drive spool, said means for rotating disposed within the belt drive platform and operably attached to the drive spool;

a belt cartridge comprising:

15 a belt, said belt having a width corresponding to the superior-inferior height of the patient when the belt is disposed around the patient, said belt also having a length corresponding to the medial-lateral circumference of the patient when the belt is disposed around the patient;

20 said belt having pull straps, a first load distribution section attached to a first end of the pull straps, and a second load distribution section attached to a second end of the pull straps;

25 wherein the first load distribution section and the second load distribution are wider than the pull straps;

a cover plate operably attached to the belt and
removably attached to the belt drive platform;
a hook and a snap latch attached to the cover plate;
5 a spline attached to the belt, said spline having a
particular shape corresponding to the shape of the
drive spool slot;

10 wherein the cover plate is removably attached to the
channel beam, the hook is disposed in the aperture, the
snap latch is removably attached to the belt drive
platform between the pair of detents and the spline is
disposed within the drive spool slot; and

wherein rotating the drive spool tightens the belt to
compress the chest.

22. A method of assembling a modular chest compression device,
15 said method comprising the steps of:

providing a belt drive platform comprising:

a housing;
a drive spool operably attached to the housing; and
20 a means for rotating the drive spool, said means for
rotating disposed within the housing and operably
attached to the drive spool;

providing a belt cartridge comprising:

a belt suitable for compressing the chest of the
patient;

25 a spline attached to the belt; and

a cover plate operably attached to the belt;
attaching the spline to the drive spool; and
attaching the cover plate to the housing.

23. A method of performing chest compressions on a patient,
5 said method comprising the steps of:

providing a belt drive platform comprising:

a housing;

a drive spool operably attached to the housing; and

a means for rotating the drive spool, said means for
10 rotating disposed within the housing and operably
attached to the drive spool;

providing a belt cartridge comprising:

a belt suitable for compressing the chest of the
patient;

15 a spline attached to the belt; and

a cover plate operably attached to the belt;

attaching the spline to the drive spool;

attaching the cover plate to the housing;

placing the patient on the housing and wrapping the belt at
20 least partially around the chest of the patient; and

rotating the drive spool to tighten the belt about the
chest of the patient.

24. The method of claim 23 comprising the further steps of:

removing the patient from the housing;
detaching the cover plate from the housing and detaching
the spline from the drive spool;
providing a second compression belt cartridge, said second
5 compression belt cartridge comprising:
a second belt suitable for compressing the chest of
the patient;
a second spline attached to the second belt; and
a second cover plate operably attached to the second
10 belt;
attaching the second spline to the drive spool;
attaching the second cover plate to the housing;
placing a second patient on the housing and wrapping the
belt at least partially around the chest of the second
15 patient; and
rotating the drive spool to tighten the second belt about
the chest of the patient.